

# Anemometer

## Calculating wind speed

If I have a three cup anemometer with half spherical cups of 80mm diameter and the cup canthers are 155mm from rotation point. If the device turns at 1 rpm, what is the resulting wind speed?

To calculate the wind speed based on the given information for your three-cup anemometer, you can use the formula for cup anemometers:

Wind Speed (in meters per second) =  $(\pi * D * \text{RPM}) / (60 * C)$

Where:

<b>D</b>	is the diameter of the cups (in meters)	
<b>RPM</b>	is the revolutions per minute	
<b>C</b>	is the distance from the cup center to the rotation point (in meters)	

In our case:

<b>D</b>	80mm	0.08m
<b>RPM</b>	1	
<b>C</b>	155mm	0.155m

Plugging in the values into the formula:

Wind Speed =  $(\pi * 0.08 * 1) / (60 * 0.155)$

Simplifying the equation:

Wind Speed  $\approx$  0.001295 m/s

Therefore, with a rotation speed of 1 RPM, the resulting wind speed would be approximately 0.001295 meters per second.